

Amendment Under 37 C.F.R. § 1.111
Serial No. 10/680,203
Sughrue Ref: Q77469

REMARKS

Applicant thanks the Examiner for acknowledging the claim for foreign priority and for confirming receipt of the priority document. Applicant also thanks the Examiner for considering the references submitted with the Information Disclosure Statement filed on October 8, 2003, as indicated by the Examiner's initials next to the reference numbers listed on the PTO/SB/08 form.

The Examiner has objected to the specification, alleging that it is "hard to understand" and noting that a substitute specification is required. However, the Examiner has not indicated any specific instance where the specification is deficient.

In response, Applicant respectfully requests that the Examiner withdraw this objection because one of ordinary skill would know how to make or use the invention after reading the original specification, and any confusion with respect to the claimed subject matter is obviated by the stylistic amendments made to the claims, which are discussed below.

Claims 1-6 are all of the pending claims. Claims 1 is the only independent claim.

Claim Rejection Under 35 U.S.C. § 112

Claims 1-6 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Specifically, the Examiner asserts that the recitation "connecting circuits for connecting switching elements in parallel with diodes in series so that the diodes mutually become reverse polarity" is unclear.

In response, Applicants have made stylistic changes to the claims so that it is clear that 1) a plurality of arms of the bridge circuit each have a connecting circuit and a pair of switching

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elements in parallel with diodes, the connecting circuit connecting in series switching elements in parallel with diodes, and 2) the diodes have reverse polarity with respect to one another.

In view of this amendment, Applicants respectfully request the Examiner to withdraw the §112 rejection of claim 1.

Furthermore, Applicants have amended dependent claims 2-6 in order to clarify the scope of subject matter claimed.

Claim Rejection Under 35 U.S.C. § 103

Claims 1-6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsuoka et al. (US 5,574,344).

Applicants respectfully traverse this rejection at least because Matsuoka does not teach or suggest all of the recitations of independent claim 1. For example, Matsuoka does not teach or suggest the claimed electric motor-driven power steering apparatus having a bridge circuit with a plurality of arms, each of the plurality of arms having a connecting circuit and a pair of switching elements in parallel with diodes, said connecting circuit connects in series switching elements in parallel with diodes, the diodes having reverse polarity with respect to one another.

With respect to a *non-limiting* embodiment of the invention described in the specification, by providing arms of the bridge circuit having a connecting circuit that connects in series a pair of switching elements in parallel with diodes and in which the diodes have reverse polarity with respect to one another, the diodes can prevent a short circuit current from flowing from the battery through a parasitic diode if the power source is connected with the wrong polarity. Moreover, the use of the bridge circuit as described allows, when an ON fault occurs in

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one of the switching elements, an output of a driver circuit to the diodes of all other switching elements to be stopped. This prevents the creation of a braking current, which would increase the necessary steering force to a force larger than a manual steering force. *See Specification at ¶ bridging pages 8 and 9.*

Matsuoka discloses a power steering apparatus having arms. Each of the arms has a single FET transistor T1, T2, T3, or T4. Two diodes having reverse polarity with respect to one another are provided between the gate and drain of the FETs T1, T2. *See Maysuoka at Fig. 6.* However, Matsuoka does not disclose that any arm of the bridge circuit has a connecting circuit and a pair of switching elements in parallel with diodes, in which the connecting circuit connects in series the pair of switching elements in parallel with diodes.

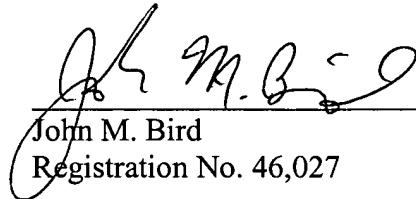
Accordingly, Applicants respectfully request the Examiner to withdraw the rejection of claim 1. In addition, Applicants request the Examiner withdraw the rejection of dependent claims 2-6 at least because of their dependency from claim 1.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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